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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|----------------------------|------------------|
| 09/932,253 | 08/16/2001 | Chi Wu | LIGHT1900-1 (LIGHT2260) | 3916 |

7590 11/18/2002

ATTN: Terrance A. Meador
GRAY CARY WARE & FREIDENRICH
Suite 1600
4365 Executive Drive
San Diego, CA 92121-2189

EXAMINER

CULBERT, ROBERTS P

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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1763

DATE MAILED: 11/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/932,253

Applicant(s)

WU ET AL.

Examiner

Roberts Culbert

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-72 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-72 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-23, and 25-71 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,652,290 to Cho et al. in view of U.S. Patent 6,127,277 to DeOrnellas et al.

Cho teaches a method for forming an optical component by obtaining a wafer having a light-transmitting medium (See Fig. 1) positioned over a base (Column 2, Lines 32-33). An etching medium is applied to the wafer to form surfaces of the component (Column 2 Lines 63-64) including the sides of a ridge that define a waveguide(See Figure 2). Cho does not show the etching medium being applied in an etching chamber configured to etch wafers having at least one dimension with a length greater than 6 inches.

Referring to Figure 6, DeOrnellas shows a continuous etching chamber (38) configured to etch wafers having at least one dimension with a length greater than 6 inches (Column 6, Lines 2-7). DeOrnellas teaches that the chamber is a suitable apparatus for the purpose of etching vertical sidewalls in a semiconductor wafer (Column 2, Lines 33-40). It would have been obvious to one of ordinary skill in the art to use the chamber of DeOrnellas because it was known in the art at the time of invention to be a suitable apparatus for etching vertical features in a wafer.

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Regarding the limitations of wafer dimensions, chamber dimensions, etch time, etch rate, sidewall smoothness, and etchant uniformity, the limitations are not given any patentable weight because there is no evidence of the criticality of the claimed ranges and parameters.

In general, a *prima facie* case of obviousness exists where the claimed ranges and prior art ranges do not overlap, but are close enough that one skilled in the art would have expected them to have the same properties. The claimed etching parameters such as etch time, sidewall smoothness, etchant uniformity, and etch rate are not sufficient to patentably distinguish over the prior art, unless it can be shown that the invention would perform differently from the prior art given the claimed parameters. *Titanium Metals Corp. of America v. Banner* 227 USPQ 773 (Fed. Cir. 1985).

Regarding the limitations of the formed surface height, in general, changes in size are not patentable unless the change produces a new and unexpected result. *Gardner v. TEC Systems, Inc.*, 220 USPQ 777 (Fed. Cir. 1984).

Claims 24 and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,652,290 to Cho et al. in view of U.S. Patent 6,127,277 to DeOrnellas et al., and U.S. Patent 6,324,204 to Deacon. As applied above, Cho and DeOrnellas describe the invention substantially as claimed, but do not show silicon for the light-transmitting medium. Deacon teaches that silicon is a common material for the manufacture of waveguides (Column 8, Line 59-Column 9, Line 9). It would have been obvious to one of ordinary skill at the time of invention to use silicon for the formation of the waveguide layer because silicon was known at the time to be a suitable material for the manufacture of a waveguide layer.

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Claim*** rejected under 35 U.S.C. 103(a) as being unpatentable over ***.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-72 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-34 of copending Application No. 09/845,093 in view of U.S. Patent 6,127,277 to DeOrnellas et al., and U.S. Patent 6,324,204 to Deacon. Although the conflicting claims are not identical, they are not patentably distinct from each other because the examined claims would have been obvious over the reference claims in view of the prior art as applied above. See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985);

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

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The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Handa shows a similar formation method for a waveguide. Wong shows a similar method for etching.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roberts Culbert whose telephone number is (703) 305-7965. The examiner can normally be reached on Monday-Friday (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on (703) 308-1633. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

November 12, 2002


GREGORY MILLS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1760